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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/079,468	05/15/1998	AKIRA NISHIMURA	360842003400	8388

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EXAMINER

JUSKA, CHERYL ANN

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

6

<b>Office Action Summary</b>	<b>Application No.</b> 09/079,468	<b>Applicant(s)</b> NISHIMURA ET AL.	
	<b>Examiner</b> Cheryl Juska	<b>Art Unit</b> 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-28 and 43-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-28 and 43-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

### ***Response to Amendment***

2. Applicant's amendment filed April 3, 2006, has been entered. Claims 22-27 have been amended as requested. Claims 1-21 and 29-42 have been cancelled and new claims 45 and 46 have been added. Thus, the pending claims are 22-28 and 43-46.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a

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gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are the relationship of the resin to the woven fabric and the relationship of the solvent to the resin, binder, reinforcing fiber, and/or woven fabric. Applicant has deleted the phrase “woven fabric impregnated with a resin diluted with a solvent” and replaced it with the phrase “woven fabric comprising a resin comprising a solvent.” Thus, it is no longer clear that the solvent is a solvent for the resin and that the solvent/resin component is impregnated into the woven fabric. For example, as presently written, the resin can be interpreted as the polymer resin employed to make the fibers of the woven fabric.

6. Claim 22 is indefinite because it is unclear what is meant by the phrase “said solvent is substantially incompatible with said binder.” It is not understood how the solvent can be “substantially incompatible.” Does applicant mean that “substantially” all of the binder is not dissolved in the “solvent” or does applicant mean that “substantially” all of the “solvent” is really a non-solvent? The two circumstances are not necessarily the same in scope. For the purposes of examination, the former interpretation is employed.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 22-28, 43, 44, and 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has amended independent claim 22 broaden the amount of solvent

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from “at least 80% of said solvent is incompatible with said binder” to “wherein said solvent is substantially incompatible with said binder...wherein the...fabric comprises the solvent in an amount such that the cloth prepreg has a cover factor of at least 90%.” While the specification teaches “at least 80% is a solvent incompatible with the binder” and “more preferably, the entire solvent is incompatible with the binder” (specification, page 16, lines 11-23). The specification as originally filed does not provide support for the presently claimed feature of “substantially incompatible.” If the claim is interpreted as the term “substantially” replaces “at least 80%,” then the claim is not supported in that the specification teaches a lower limit of 80%.

“Substantially” is broader in scope than 80% (e.g., including 60%). [Applicant’s new claim 45 implies that “more than 80%” is indeed broader than the “substantial” limitation recited in claim 22, from which claim 45 depends.] Even if the claim is interpreted as “substantially” all of the binder is not dissolved in the “solvent,” the specification does not provide adequate support for the amendment since the specification does not teach any range for the amount of binder dissolved in a solvent. Therefore, claims 22-28, 43, 44, and 46 are rejected as containing new matter.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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10. Claims 22-28, 43, and 44 stand rejected under 35 USC 103(a) as being unpatentable over US 5,447,785 issued to Kishi et al. in view of US 5,100,713 issued to Homma et al. as set forth in section 3 of the Final Rejection (11/02/05).

Applicant has amended independent claim 22 to change the amount of solvent from “at least 80% of said solvent is incompatible with said binder” to “wherein said solvent is substantially incompatible with said binder...wherein the...fabric comprises the solvent in an amount such that the cloth prepreg has a cover factor of at least 90%.” In other words, applicant has merely broadened the range of solvent amount that is incompatible with the binder. Said amendment is insufficient to overcome the present rejection in that the claims are drawn to a cloth prepreg (i.e., final product) and the solvent is not present in said final product. Limitations drawn to process steps and intermediate products are not necessarily given patentable weight in final product claims unless said steps or intermediate products manipulatively affect said final product. Applicant teaches said solvent limitations are required to obtain the high cover factor of the prepreg and a resin content of 30-60 wt.% (specification, page 16, lines 19-27). Since Kishi also teaches the importance of high cover factor and a resin content of 30-50 % (col. 16, lines 6-15), the examiner does not see a patentable distinction between the prior art and the present invention. Therefore, the present rejection is maintained.

11. New claims 45 and 46 are rejected under 35 USC 103(a) as being unpatentable over US 5,447,785 issued to Kishi et al. in view of US 5,100,713 issued to Homma et al.

New claim 45 contains the limitation “wherein more than 80% of said solvent is incompatible with said binder.” Since this limitation was previously addressed in the Final

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Rejection (11/02/05) and since said limitation is encompassed in the rejection of claim 22 above, claim 45 is also rejected for the reasons of record.

Regarding new claim 46, it is argued that modification of the Kishi invention with the teachings of Homma would result in the binder binding the reinforcing fiber-containing woven fabric in a width direction. In other words, Homma teaches application of the binder in a line-like manner to the warps and wefts of the fabric. As such, the width of the fabric would be subject to binder. Therefore, claim 46 is also rejected.

#### ***Response to Arguments***

12. Applicant's arguments filed with the RCE amendment have been fully considered but they are not persuasive.

13. Applicant traverses the above rejection asserting that the solvent is not present in the final product (Amendment, paragraph spanning pages 5-6 and 1<sup>st</sup> paragraph, page 6). Specifically, applicant asserts that at least half of the drying zone is at a temperature below the boiling point of the solvent. As such, applicant asserts, "there is simply no way for all the solvent present in the resin to evaporate from the resin such that 'the solvent is not present in said final product' as alleged by the Examiner." In other words, the final products of the present invention, "will inevitably contain the solvent, at least in trace amounts if not more" (Amendment, page 6, lines 1-2). Applicant continues to argue that the parameters of the drying process would make it "impossible to bone-dry a resin such that there is no solvent therein" (Amendment, page 6, 1<sup>st</sup> paragraph). The examiner respectfully disagrees.

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14. In particular, while applicant asserts that solvent is still present in the final product, the arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Applicant's own specification, in describing the drying process, teaches a first drying step "thus drying the solvent to a certain degree" is followed by a reverse direction process in order to "dry the remaining solvent." (Specification, page 15, line 23 – page 16, line 1.) The specification continues, "By winding the *solvent dried fabric*...." (Specification, page 16, line 9). Hence, the specification makes clear that the intent is to remove the solvent from the final product. Applicant asserts these "drying" recitations from pages 15-16 of the specification are relative terms that merely mean a "reduction in the solvent from an initial value to some acceptable final value" (Amendment, page 6, 1<sup>st</sup> paragraph). While the "drying" terms may or may not be relative terms, it is reasserted that the specification makes it clear that the intent is to fully dry the solvent from the final product. Additionally, it is well known in the art that residual solvent from a wet process prepreg must be removed completely in order to prevent defects in the final fiber reinforced plastic (FRP) composite. [note US 5,037,284 issued to Angell, Jr. et al., col. 1, lines 13-41 and US 4,968,767 issued to Burba et al., col. 1, lines 43-58.] As such, applicant's arguments are not persuasive in view of the teachings of the specification and the convention in the art.

15. Applicant also argues the above rejection by asserting that the feature "wherein said solvent is substantially incompatible with said binder" does indeed "manipulatively affect said final product" in that the final product with this claimed feature shows unexpected results over a product without this claimed feature (Amendment, page 7, 2<sup>nd</sup> paragraph). Regarding the working examples from the specification which applicant relies upon for support (Amendment,



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page 7, 2<sup>nd</sup> paragraph), it is noted that the only examples that provide a direct comparison are Example 9 and Comparative Example 4, which vary only in the solvent employed. All of the other examples vary by more than one factor, which allows for more than one variable in the comparison thereof. As such, one cannot properly extrapolate only one comparative result showing a difference in cover factors due to the use of different solvents to the full scope of the invention as presently claimed (i.e., generic resin and generic solvent that is substantially incompatible with a generic binder).

16. Additionally, in the event that it is shown that solvent is inherently present in the final product, it is noted that Kishi teaches the fabric may be impregnated with resin by either a wet process (i.e., with solvent) or a dry process (i.e., hot melt method). As such, it would have been obvious to one skilled in the art to employ a solvent to produce the final product. Therefore, applicant's arguments are found unpersuasive and the above rejection is maintained.

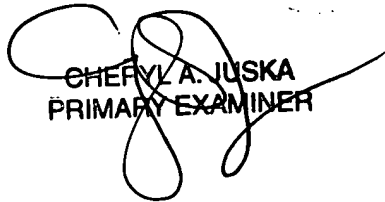
### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Juska whose telephone number is 571-272-1477. The examiner can normally be reached on Monday-Friday 10am-6pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached at 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



CHERYL A. JUSKA  
PRIMARY EXAMINER

cj  
June 5, 2006